Work Order ID 115498

April-02-14 11:12:59 AM

115498

Item ID: D3391-021 **Accept** *N900040100* **Setup Start** *NS1*

Revision ID: **Stop** *NS2*

Item Name: Fwd Tube Assembly

Start Date: 4/02/14 **Start Qty:** 1.00 *1*

Required Date: 4/16/14 **Req'd Qty:** 1.00 *1*

Reference:

Cust Item ID:

Customer:

Run Start *NR1*

Stop *NR2*

Approvals: **Process Plan:** ML5 **Date:** 14-04-02 **Tooling:** _____ **Date:** _____

QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____

Draw Nbr	Revision Nbr
D3391	I

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
100	Skidtubes	0.00							
100									
Skidtubes	**Memo**	0.00							
Skidtubes	Cut as per dwg.								
110	BENDING MACHINE - SKIDTUBES	0.00							
110									
CNC Bend 1	**Memo**	0.00							
CNC Delta 100 Bender	Bend as per Dwg D3391 Using Bend Prog 3391021								
120	QC5- Inspect part completeness to step on W/O	0.00							
120									
QC	**Memo**	0.00							
Quality Control									

14/04/14

14/04/15

DAS 03 9-89

14-4-15

H-6.75

Item ID: D3391-021 **Accept** *N900040100* **Setup Start** *NS1*
Revision ID: **Stop** *NS2*
Item Name: Fwd Tube Assembly

Start Date: 4/02/14 **Start Qty:** 1.00 *1*
Required Date: 4/16/14 **Req'd Qty:** 1.00 *1*
Reference:

Cust Item ID:
Customer:

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____
QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____

Run Start *NR1*
Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130		0.00							
130	HAAS CNC VERTICAL MACHINING #1					1	Ø		MH 14/05/07
HAAS 1	**Memo**	0.00							
HAAS CNC vertical machine #1	1-Machine as per Folio FA590 Rev. T & Dwg D3391 Rev. T Identify as D3391-1 2-Deburr								
140	QC2- Inspect parts off machine FAI/FAIB	0.00							
140						1	Ø		MH 14/08/07
QC	**Memo**	0.00							
Quality Control									
150		0.00							
150	CONVENTIONAL MILLING MACHINE					1	Ø		14-5-28
Mill Conv	**Memo**	0.00							
Conventional Milling Machine	Drill X1 Aft cap as per Dwg D3391 .1875" dia								

68-6
13
DAS

Item ID: D3391-021 **Accept** *N9000040100* **Setup Start** *NS1*
Revision ID: **Stop** *NS2*
Item Name: Fwd Tube Assembly

Start Date: 4/02/14 **Start Qty:** 1.00 *1*
Required Date: 4/16/14 **Req'd Qty:** 1.00 *1*
Reference:

Cust Item ID:
Customer:

Run Start *NR1*
Stop *NR2*

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____
QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
160	QC2- Inspect parts off machine FAI/FAIB	0.00				1	Ø		14-5-28
160									
QC	**Memo**	0.00							
Quality Control									
170	QC8- Inspect parts - second check	0.00				1	Ø		DAS 08 9-89
170									
QC	**Memo**	0.00							
Quality Control									

DAS 13 68-6

DA 14/05/28

Work Order ID 115498

April-02-14 11:12:59 AM

115498

Item ID: D3391-021 **Accept** *N900040100* **Setup Start** *NS1*

Revision ID:

Item Name: Fwd Tube Assembly **Stop** *NS2*

Start Date: 4/02/14 **Start Qty:** 1.00 *1*

Required Date: 4/16/14 **Req'd Qty:** 1.00 *1*

Reference:

Cust Item ID:

Customer:

Run Start *NR1*

Stop *NR2*

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
180		0.00							
180	Skidtubes								
Skidtubes		0.00							
Skidtubes									

Memo

1-Drill Remaining two holes for tow cap using DT 8819 Locating off of .1875" holes drilled in previous step

2-Drill float bag holes as per Dwg D3391 using DT8798(Do not open tow cap holes to finish size)
(ONLY DRILL HOLES MARKED "A")

3-Open tow cap holes to .208" as per Dwg D3391

4-Open Tow Ring hole to .640" as per Dwg D3391

5- open float bag holes 0.328" and counter sink as per dwg D3391

6-Deburr & Scribe Batch number Inside aft end.

7-Transfer drill D3391-021 with D3391-023
NO WEARPLATE HOLES ARE TRANSFER DRILLED
MID TUBE BATCH # 114278

14-6-30 DD

14-8-11

Work Order ID 115498

April-02-14 11:12:59 AM

115498

Item ID: D3391-021 **Accept** *N900040100* **Setup Start** *NS1*

Revision ID: **Stop** *NS2*

Item Name: Fwd Tube Assembly

Start Date: 4/02/14 **Start Qty:** 1.00 *1*

Required Date: 4/16/14 **Req'd Qty:** 1.00 *1*

Reference:

Cust Item ID:

Customer:

Run Start *NR1*

Stop *NR2*

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
190	QC5- Inspect part completeness to step on W/O	0.00						DAS 24 9-89	DAS 38 9-89
190						1			14/8/13
QC	**Memo**	0.00							
Quality Control									
200	Chemical Conversion Coat per QSI005 4.1	0.00							
200						1	14-8-13		
HandFinish	**Memo**	0.00							
Hand Finishing									
210	QC7-Inspect Chemical Conversion Coat	0.00							
210									
QC	**Memo**	0.00					14-8-13		
Quality Control									

Item ID: D3391-021 **Accept** *N9000040100* **Setup Start** *NS1*
Revision ID: **Stop** *NS2*
Item Name: Fwd Tube Assembly

Start Date: 4/02/14 **Start Qty:** 1.00 *1* **Cust Item ID:**
Required Date: 4/16/14 **Req'd Qty:** 1.00 *1* **Customer:**
Reference:

Run Start *NR1*
Stop *NR2*

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____
QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
220		0.00							
220	Skidtubes								
Skidtubes	**Memo**	0.00							
Skidtubes	1-instal spacers as per dwg D3391 A/R Magnabond 6398 batch: M129172 exp. date: 14-12-30 cure time 12hrs. as per QSI015 2- grind crossbolt flush 3-back drill crossbolt if necessary								
230	QC5- Inspect part completeness to step on W/O	0.00	DAS 16 9-89						
230									
QC	**Memo**	0.00							
Quality Control									
235	Pressure Wash per QSI005 4.3	0.00							
235									
HandFinish	**Memo**	0.00							
Hand Finishing	AND REALODINE AS PER QSI 005								

14-8-13

14-8-18

14/08/19

1 MG 4-8-20

Item ID: D3391-021 **Accept** *N9000040100* **Setup Start** *NS1*
Revision ID: **Stop** *NS2*
Item Name: Fwd Tube Assembly

Start Date: 4/02/14 **Start Qty:** 1.00 *1*
Required Date: 4/16/14 **Req'd Qty:** 1.00 *1*
Reference:

Cust Item ID:
Customer:

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____
QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____

Run Start *NR1*
Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
240 *240* Powdercoat Powder Coating	White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum M 178959 **Memo** START TIME: 2:25 OVEN TEMPERATURE: 385° FINISH TIME: 3:00	0.00 0.00				1	0	14-9-9	DAS 34 9-89
250 *250* QC Quality Control	QC3- Inspect Part Finish **Memo**	0.00 0.00				1x	0	14/09/10	DAS 15 9-89
254 *254* HandFinish Hand Finishing	Assemble as per dwg **Memo**	0.00 0.00				1x	0	14/09/10	

Item ID: D3391-021 **Accept** *N900040100* **Setup Start** *NS1*
Revision ID: **Stop** *NS2*
Item Name: Fwd Tube Assembly
Start Date: 4/02/14 **Start Qty:** 1.00 *1*
Required Date: 4/16/14 **Req'd Qty:** 1.00 *1*
Reference:
Cust Item ID:
Customer:

Run Start *NR1*
Stop *NR2*

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____
QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
256	QC5- Inspect part completeness to step on W/O	0.00				1			DAS 38 9-89
256									14-9-11
QC	**Memo**	0.00							
Quality Control									
260	Identify as per dwg & Stock Location: W10	0.00	D412-742-043 / B123616			1x	0	HL	11/09/10
260									
Packaging	**Memo**	0.00							
Packaging									
280	QC21- Final Inspection - Work Order Release	0.00							
280									14/9/11
QC	**Memo**	0.00							
Quality Control									

MO 14094

Picklist Print

April-02-14 11:13:02 AM

Work Order ID: 115498

115498

Parent Item: D3391-021

D3391-021

Parent Item Name: Fwd Tube Assembly

Start Date: 4/02/14 **Required Date:** 4/16/14

Start Qty: 1.00 **Required Qty:** 1.00

Comments:

IPP A05.09.13New issue KJ/JLM
IPP B06.02.10Dwg rev.D ecn 773 EC
IPP C06.05.02Added inspections EC
IPP D 07.03.13 rev F dwg EC
IPP E 07.11.07 revG dwg ecn1053P EC verified by: DD
IPP Rev:f ECN 1056 07-11-12 DD verified by: EC
IPP Rev:G 08-09-08 new process (ecn 08-510) DD verified by:EC
IPP Rev:H 08-09-10 revH as per dwg DD verified by:EC
IPP Rev I 09.02.02 added hardware EC verifiified by: DD IPP Rev:J
11.11.14 AS PER REV.I DD verified by:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D4095-051		Manufactured	No				Each	9.0000		1			
D4095-051 Wearpad Assembly									**	B718896 (1x) HL			
				Location			**Loc Qty**		**Loc Code**				
				FP001			9						
				108291			9						
D6013-047		Manufactured	No			100	Each	166.0000	1	1			
D6013-047 Skidtube Material									**	DC 14/04/14			
				Location			**Loc Qty**		**Loc Code**				
				LG003			166						
				72505			42			(1)			
				86064			124						

Work Order ID: 115498

115498

Parent Item: D3391-021

D3391-021

Parent Item Name: Fwd Tube Assembly

Start Date: 4/02/14 **Required Date:** 4/16/14

Start Qty: 1.00 **Required Qty:** 1.00

D3670-4-200	Manufactured	No		220	Each	300.0000	4	4

D3670-4-200

Bushing

**

4-8-13

Location	Loc Qty	Loc Code
FG	10	
87709	10	
LG001	290	
103880	39	
109108	242	
96240	9	

D3401-041	Manufactured	No			Each	30.0000		1

D3401-041

Tow Cap Assembly

**

4/14/09/10

Location	Loc Qty	Loc Code
FP001	30	
103868	5	
109127	9	
92680	1	
94116	4	
94303	11	

X1

Work Order ID: 115498

115498

Parent Item: D3391-021

D3391-021

Parent Item Name: Fwd Tube Assembly

Start Date: 4/02/14 **Required Date:** 4/16/14

Start Qty: 1.00 **Required Qty:** 1.00

NAS1149C0332R Purchased No Each 9,644.000 10

NAS1149C0332R

WASHER

**

Location	Loc Qty	Loc Code	
GA	1005		
125654	1005		
ST292	4968		
m128591	4968		
st510	3671		
m126319	61		
m127306	2500		
m127410	1084		X10
m127831	26		

AN3C4A Purchased No Each 2,208.000 10

AN3C4A

Bolt

**

Location	Loc Qty	Loc Code	
FG	20	M129520	
122814	20		X10
ST350/513	1000		
M128606	1000		
ST512	3		
124221	3		
ST513	1185		
125388	122		
M127410	1		
M127832	62		
M128634	1000		

Picklist Print

April-02-14 11:13:03 AM

Work Order ID: 115498 *115498*

Parent Item: D3391-021 *D3391-021*

Parent Item Name: Fwd Tube Assembly

Start Date: 4/02/14 **Required Date:** 4/16/14

Start Qty: 1.00 **Required Qty:** 1.00

D3672-1 Manufactured No Each 1,420.000 4

D3672-1 **

Phenolic Washer

Location	Loc Qty	Loc Code	
FG	10		
85222	10		
ST060	1410		
103845	4		
112218	500		
113581	500		
93886	224		
99099	182		x4

AELS-1032-225 AELS8-1032-225 Purchased No Each 400.0000 10

AELS-1032-225 x AELS7-1032-225 **

Insert

Location	Loc Qty	Loc Code	
ST280	400	M129649	
m128179	400		x10

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

DART AEROSPACE

QA Closed: Date: Work Order update only ☐

Work Order: _____

Part No. _____

NCR No. _____

DISPOSITION

Rework ☐
Scrap ☐
Use-as-is ☐
Suspected Unapproved ☐

AGAINST DEPARTMENT/PROCESS

Skid-tube ☐ Crosstube ☐ Water Jet ☐ Engineering ☐
Machining ☐ Small Fab ☐ Prod. Eng. Coor. ☐ Quality ☐
Thermoforming ☐ Finishing ☐ Rec/Store/Packaging ☐ Other ☐
Large Fab ☐ Composite ☐ Supplier ☐

Root Cause		Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design	☐									
Doc/Data	☐									
Equip/Tooling	☐									
Handling/Pre	☐									
Material	☐									
Operator	☐									
Offset/Setup	☐									
Process	☐									
Supplier	☐									
Training	☐									
Transport	☐									
Unapproved	☐									

FAULT CATEGORY

Landing Gear

☐ Bending
☐ Centre Not Concentric
☐ Cracks
☐ Crimp/Kink/Ripple/Wave
☐ Cuffs
☐ Crushing
☐ Heat Treat
☐ Inspection Strip in Tube
☐ Marks/Chatter
☐ Turning Sequence
☐ Wave/Twist in Tube

General

☐ Bend
☐ BOM/Route
☐ Broken/Damage/Defect
☐ Burrs
☐ Contamination
☐ Countersink
☐ Cut Too Short
☐ Drawing
☐ Drill Holes
☐ Finish
☐ Fit/Function
☐ Folio/Program
☐ Grain
☐ Hardware
☐ Inspection Incomplete/Unqualified
☐ Instructions Incomplete/Unclear
☐ Misaligned/off center
☐ Mislabeled
☐ Misread
☐ Off-set
☐ Out of Calibration
☐ Out of Sequence
☐ Outside Dimensions
☐ Over/Under tolerance
☐ Part Incorrect
☐ Part Lost/Missing
☐ Part Moved
☐ Positioned Wrong
☐ Power Loss/Surge
☐ Pressure/Forced
☐ Set-up
☐ Temperature/Cure
☐ Weld
☐ Wrong Stock Pulled
☐ Other

_____
_____
_____

DART AEROSPACE LTD	Work Order:	115498
Description: Float Skidtube (412)	Part Number:	D3391-1
Inspection Dwg: D3391 **Rev:** I		Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
0.687	+0.010/-0.000	.687	✓		MH-04	Caliper
3.590	+0.025/-0.010	3.610	✓			
3.300	+0.040/-0.000	3.330	✓			
1.429	+0.040/-0.060	1.451	✓			
4.250	+/-0.010	4.245	✓			
4.250	+/-0.010	4.250	✓			
0.500	+/-0.010	.500	✓			

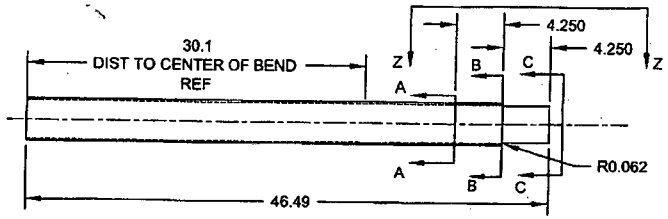
Measured by:	MH / SA
Date:	14/05/07

Audited by:	DAS
Date:	14/05/28

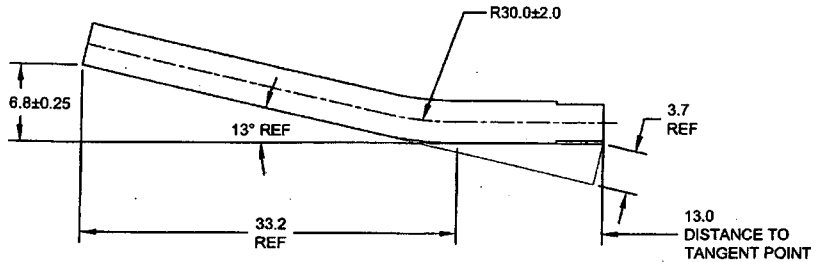
08 9-89

Preliminary Approval:	
Date:	

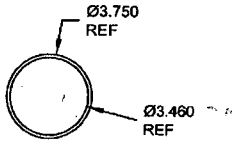
Rev	Date	Change	Revised by	Approved
A	06.04.27	New Issue P/O D3391-011/-021	KJ/JLM	
B	06.06.19	Tolerances revised per D3391 Rev. E	KJ/JLM	
C	07.03.21	Dimensions removed per Dwg rev. F	KJ/JLM	
D	07.11.23	Dwg Rev. updated	KJ/EC/DD	
E	09.12.14	Dwg Rev updated	KJ	
F	11.06.21	Dimension 0.500 added	KJ	
G	12.05.15	Dwg Rev updated	KJ	



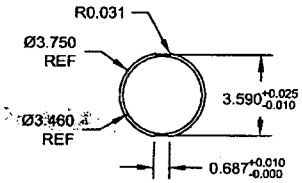
D3391-1 CUTTING DETAIL
(MAKE FROM D6013-047 SKIDTUBE MATERIAL)



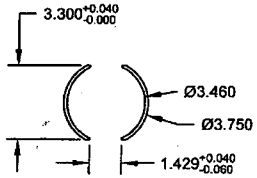
D3391-011/-021 BENDING DETAIL
(MAKE FROM D3391-1)



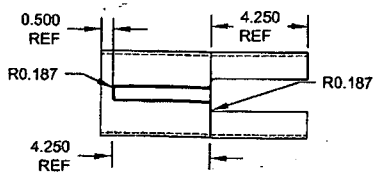
SECTION A-A
SCALE 2X



SECTION B-B
SCALE 2X



SECTION C-C
SCALE 2X



VIEW Z-Z
SCALE 2X

115498 MCJ
14-04-02

RELEASED
2011-11-04

DESIGN	PH	**DART AEROSPACE USA, INC**	
DRAWN	XDF	KENT, WA	
CHECKED		DRAWING NO.	REV. I
MFG. APPR.		D3391	SHEET 3 OF 8
APPROVED		TITLE	SCALE
DE APPR.		412 FLOAT SKIDTUBE	NTS
DATE	11.10.13		

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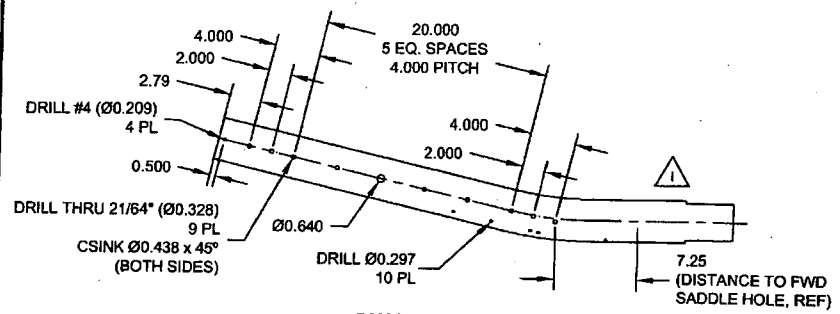
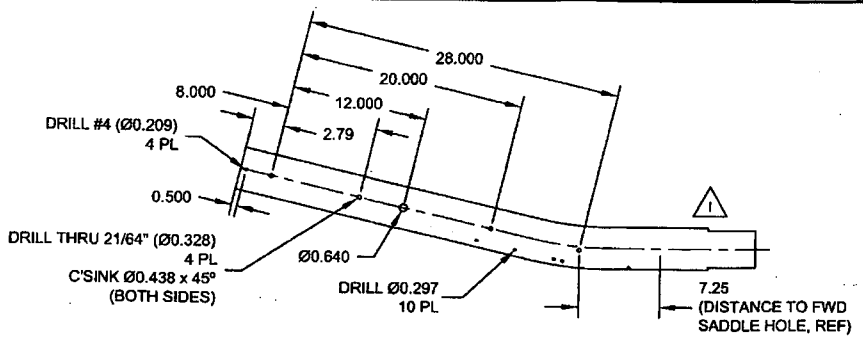
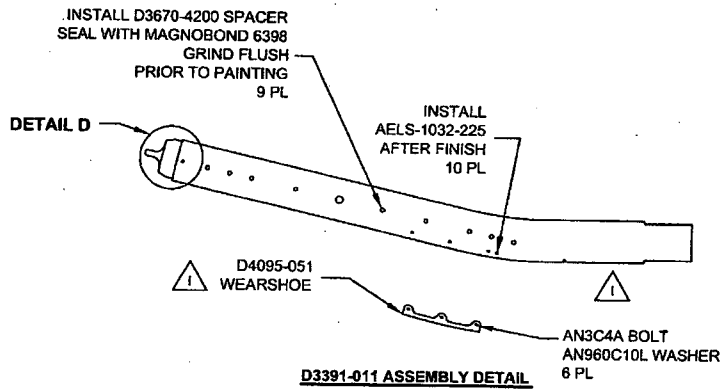


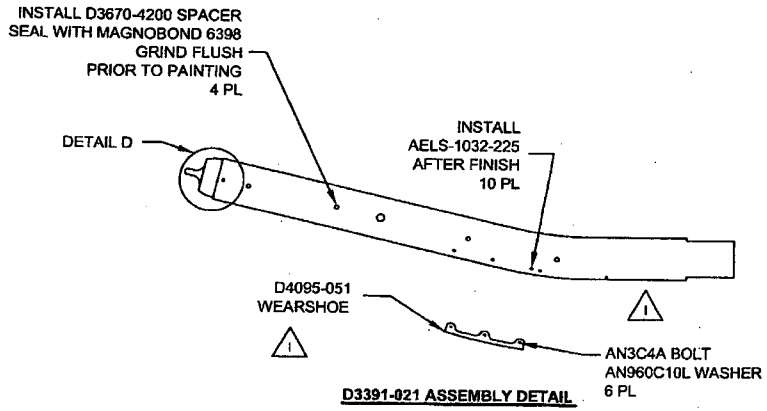
D3391-011 DRILLING DETAIL



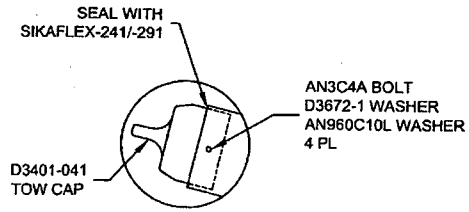
D3391-021 DRILLING DETAIL



D3391-011 ASSEMBLY DETAIL



D3391-021 ASSEMBLY DETAIL



DETAIL D
SCALE 2X

D3391-011/-021 FWD TUBE ASSEMBLY PARTS LIST

QTY - 011	QTY - 021	PART NUMBER	DESCRIPTION
X		D3391-011	FWD TUBE ASSEMBLY
	X	D3391-021	FWD TUBE ASSEMBLY
1	1	D3401-041	TOW CAP
9	4	D3670-4200	SPACER
4	4	D3672-1	WASHER
1	1	D4095-051	WEARSHOE
1	1	D6013-047	FWD TUBE
10	10	AN3C4A	BOLT
10	10	AN960C10L	WASHER
10	10	AELS-1032-225	INSERT

RELEASED
2011-11-04

DESIGN	PH	DART AEROSPACE USA, INC KENT, WA
DRAWN	XDF	
CHECKED		DRAWING NO. REV. I
MFG. APPR.		D3391 SHEET 4 OF 8
APPROVED		TITLE SCALE
DE APPR.		412 FLOAT SKIDTUBE NTS
DATE	11.10.13	

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